

Brewers Dried Grains In Poultry Feed

Table 1:

Composition of Brewers Dried Grains		
Proximate Analysis		
Protein	%	27.1
Fat	%	7.5
Linoleic Acid	%	3.9
Nitrogen-free Extract (NFE)	%	43.4
Fibre	%	11.7
Ash	%	4.0
Moisture	%	6.3
Minerals		
Calcium	%	0.27
Phosphorus	%	0.66
Potassium	%	0.08
Magnesium	%	0.19
Iron	%	0.029
Sodium	%	0.26
Copper	Mg/Kg	21.3
Manganese	Mg/Kg	37.6
Amino Acids		
Thiamin	Mg/Kg	0.7
Riboflavin	Mg/Kg	1.5
Niacin	Mg/Kg	46.4
Pantothenic Acid	Mg/Kg	8.6
Choline	Mg/Kg	2110
Pyridoxine	Mg/Kg	1.7
Folic Acid	Mg/Kg	0.22
Biotin	Mg/Kg	0.08
Para Aminobenzioc Acid	Mg/Kg	4.8
Inositol	Mg/Kg	264
Vitamin B ₁₂	Mcg/Kg	3.7
Vitamin E	IU/Kg	65.1
Arginine	%	1.3
Histidine	%	0.6
Isoleucine	%	2.0
Leucine	%	3.2
Lysine	%	0.9
Methionine	%	0.6
Phenylalanine	%	1.8
Threonine	%	1.0
Tryptophan	%	0.4
Tyrosine	%	1.2
Valine	%	1.7
Cystine	%	0.4
Aspartic Acid	%	1.9
Serine	%	1.4
Glutamic Acid	%	6.5
Glycine	%	1.2
Alanine	%	1.8

Values are taken from "The Atlas of Nutritional Data, United States and Canadian Feeds", National Academy of Sciences, Washington DC, 1971, and from analyses carried out on composite samples of BDG.

IT IS APPARENT that brewers dried grains (BDG) contribute a wide variety of essential nutrients which are considered in feed formulations for poultry rations (Tables 1 and 2). Brewers dried grains contribute primarily to the protein, amino acid and energy content of formula feeds where this ingredient is used in the feed formulation (Table 1).

This ingredient also furnishes trace minerals, B-vitamins and Vitamin E. Attention is directed to the linoleic acid content of brewers dried grains which can furnish a significant percentage of this essential fatty acid for poultry.

The metabolizable energy content has been reported as 2513 kcal/kg. Suggested levels of brewers dried grains for use in poultry feeds are listed in Table 2. The value of brewers dried grains as an ingredient for the formulation of poultry feeds will be discussed below.

Commercial Layers

It has been reported from the University of Florida that brewers dried grains can be used in feeds for commercial

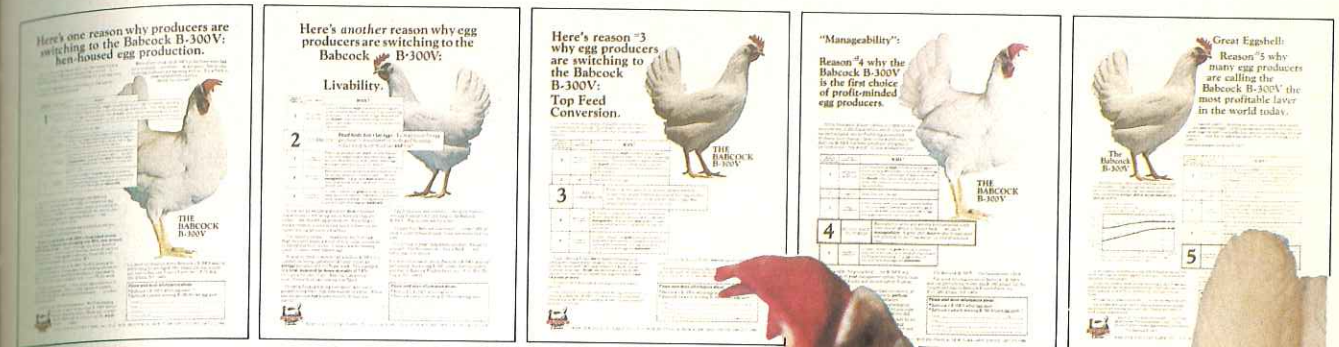
Table 2:

Suggested Levels of Brewers Grains in Poultry Feeds

Type of Feed	% of Total Ration
Poultry Broilers:	
Starters	5
Finisher	10
Breeder Ration	20
Layer Strains:	
Starter	5
Grower	25
Layer Ration	20
Breeder Ration	20
Turkeys:	
Starter	5
Grower	15
Finisher	15
Breeder Holding Ration	25
Breeder Ration	15
Ducks:	
Starter	10
Grower	15
Breeder Developer Ration	15
Breeder Ration	15

These are maximum levels for most circumstances, although some situations may permit higher usages.

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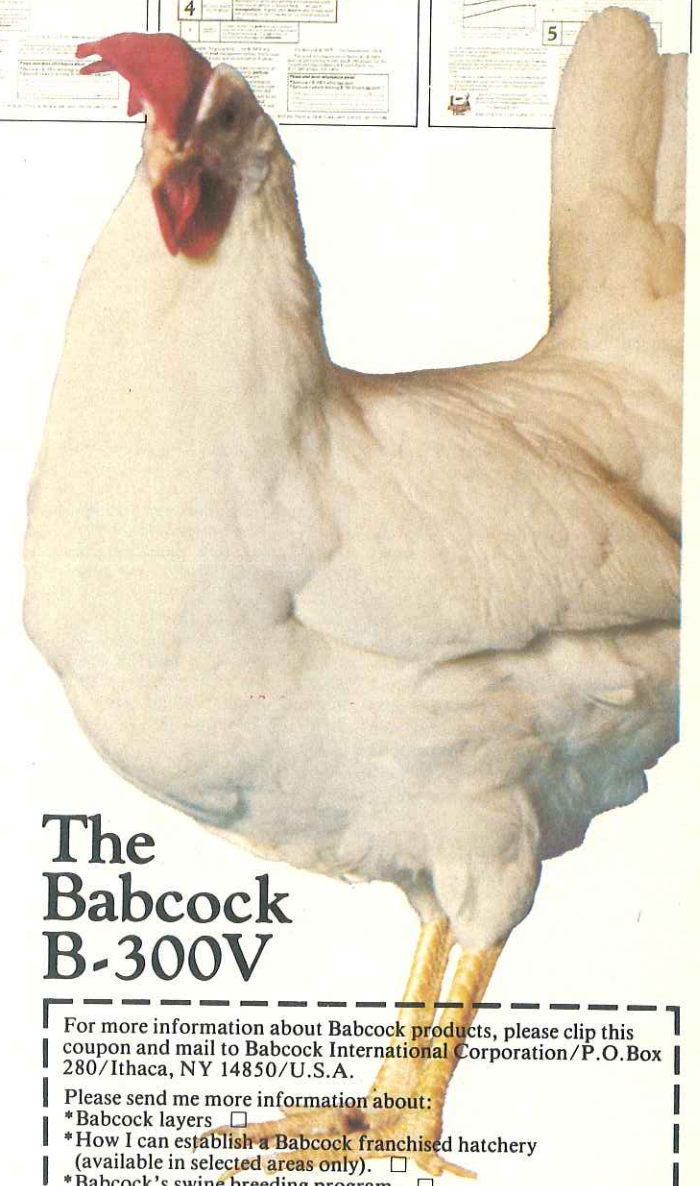
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layers at levels of 5-10%. Both of these levels produce a significant increase in egg production when substituted in the laying hen feed formula.

These two levels of brewers dried grains improve interior egg quality as measured by Haugh Units. The latter reported data were also confirmed by research workers at the University of Georgia. Brewers dried grains are somewhat lower in ME than corn. Other reports have shown that this ingredient can be used in commercial egg feed formulations at levels up to 20% without adversely affecting the rate of egg production.

Most recent reports from the University of Georgia indicate that the use of 10 or 20% BDG in both broiler and breeder rations or commercial layers maintained in cages significantly reduce the fat content of the liver. This ingredient contains a factor which is of significance in preventing the *Fatty Liver Syndrome* in laying hens.

It has recently been noted that 7% brewers dried grains can be substituted into rations for broiler breeders. Additional research is presently in progress to ascertain if even higher levels of BDG can be used in formulating feeds for

broiler breeders.

Brewers dried grains can be used to advantage in feed formulations for commercial layer replacement pullets. The suggested levels of 20-25% are given in Table 2.

This ingredient can also be used in the formulation of feeds for broiler breeder replacement pullets, during the period from the 6th to the 22nd-23rd week. It has been reported from Texas A & M University that 35 to 40% brewers dried grains can be used in the formulation of the low lysine broiler breeder replacement diet.

This diet has successfully been used to retard growth and delay sexual maturity in breeder replacement pullets. It is a well established fact that it is necessary to restrict the nutrient intake, retard the growth rate and delay the onset of sexual maturity of broiler breeder replacement pullets through the period from the 7th to the 23rd week of development.

It is necessary to restrict feed intake in accordance with the breeder's recommendations when using this ingredient in growing and developing rations for broiler breeder replacement pullets.

A most comprehensive series of experiments have been carried out at the

University of Nebraska in determining the levels of brewers dried grains and BDG containing 5% yeast, in feed formulation for growing and breeding turkeys.

Results from this series of studies show that 2½ and 5% BDG can be used in turkey starter rations, and 5-15% of this ingredient can be used in growing and finishing feeds for turkeys from 6-20 weeks of age. Pelleting the turkey feed definitely increases the utilisation of the rations. The pelleting process reduces the bulkiness of the diet and may also improve the digestion and utilisation of the brewers dried grains.

Extensive studies carried out at the University of Nebraska and other experimental stations have shown that BDG can be used at levels of 10, 20, 30 or 40% in rations for prebreeder and breeder turkeys. Improvements in egg production rate, fertility and hatchability resulted when brewers dried grains and BDG with yeast were substituted into the rations for breeder turkeys.

Dr. J.R. Couch

(The author is a scientist at the Texas A & M University, USA—Editor)

Drêches Séchées De Brasserie Dans La Nourriture Des Volailles

Sommaire—Il est évident que les drêches séchées de brasserie (DSB) possèdent une grande variété de produits nutritifs essentiels qui sont intéressants pour les formulations alimentaires des rations de volailles (Tableaux 1 et 2). Les drêches séchées de brasserie contribuent principalement aux protéines, aminoacides et teneur énergétique des aliments où on utilise ce produit dans la formulation alimentaire (Tableau 1).

Ce produit fournit aussi des oligo-éléments, des vitamines B et des vitamines E. On s'intéresse tout particulièrement à la teneur en acide linoléique des drêches séchées de brasserie car elles peuvent fournir un pourcentage important de cet acide gras essentiel pour les volailles.

L'Université de Floride rapporte qu'on peut utiliser les drêches séchées de brasserie dans la nourriture des poules commerciales à des taux de 5-10%. Ces deux taux assurent une augmentation significative de la production des oeufs quand on introduit des drêches dans la formule alimentaire des poules pondeuses.

Les drêches séchées de brasserie peuvent être utilisées pour améliorer la formulation alimentaire des poulettes de remplacement des pondeuses commerciales. Le tableau 2 suggère des taux de 20-25%.

Une série très complète d'expériences a été effectuée à l'Université de Nebraska pour déterminer les taux de drêches de brasserie (contenant 5% de levure) dans la formulation alimentaire des dindes d'élevage et reproductrices.

Granos Secos De Cervecería En Pienso Para Aves

Resumen—Es aparente que los granos secos de cerveza (BDG) contribuyen con una gran variedad de nutrientes esenciales, considerados para la formulación de piensos para raciones avícolas (Tablas 1 y 2). Los granos secos contribuyen primariamente en el contenido de proteína, aminoácidos y energía de piensos de fórmula donde se usa este ingrediente en la formulación del pienso (Tabla 1).

Este ingrediente suministra también microminerales, vitaminas del complejo B y vitamina E. Se dirige la atención al contenido de ácido linoleico de los granos secos de cerveza, que pueden proveer un porcentaje significativo de este ácido graso esencial para las aves.

De la Universidad de Florida se informa que se pueden usar los granos secos de cerveza en piensos para ponedoras comerciales en los niveles del 5-10%. Ambos niveles producen un aumento significativo en la producción de huevos cuando se emplean en el pienso para la gallina en postura.

Se pueden usar también ventajosamente los granos secos de cerveza en la formulación de piensos para pollonos de reposición de postura para consumo. Se dan en la Tabla 2 los niveles sugeridos de 20-25%.

Se ha realizado en la Universidad de Nebraska una serie completa de experimentos para determinar los niveles de granos secos de cerveza y BDG que contengan 5% de levadura, en la formulación de piensos para la cría y recría de pavos.

Trebbia di birra essiccata nel mangime avicolo

Riassunto—E' stato provato che la trebbia di birra essiccata rappresenta una vasta varietà di sostanze nutritive essenziali, necessarie per la composizione dell'alimentazione avicola (tabelle 1 e 2). La trebbia di birra essiccata contribuisce innanzitutto al contenuto di amino-acidi, di proteine e d'energia nei mangimi composti, quando viene usata nella composizione del mangime (tabella 1).

Questo ingrediente fornisce anche oligo-elementi, vitamine B e E. L'attenzione è rivolta verso il contenuto di acido linoleico della trebbia di birra, che può dare una notevole percentuale di questo acido grasso, essenziale per il pollame.

L'università della Florida ha riportato che la trebbia di birra può essere usata nel mangime di ovaiole commerciali ad un livello del 5-10%. Se sostituiti nella composizione del mangime ovaiole, questi due livelli possono dare un importante aumento della produzione di uova.

La trebbia di birra può essere usata per migliorare la composizione del mangime per nuove pollatelle commerciali di rimonta. I livelli suggeriti del 20-25% sono indicati nella tabella 2.

Una importante serie di esperimenti è stata eseguita all'Università di Nebraska, per determinare i livelli della trebbia di birra e il suo contenuto di lievito nella composizione del mangime per la crescita e l'allevamento di tacchini.

Getrockneter Biertreber im Geflügelfutter

Zusammenfassung—Es liegt auf der Hand, dass getrockneter Biertreber die verschiedensten essentiellen Nährstoffe zur Ration beisteuert, die bei der Rezeptur zu berücksichtigen sind (Tabelle 1 und 2). Biertreber steuert in erster Linie zum Protein-, Aminosäuren- und Energiegehalt einer mit dieser Ingredienz formulierten Ration bei (Tabelle 1).

Ausserdem liefert Biertreber Spurenelemente und Vitamine der Komplexe B und E. Besondere Aufmerksamkeit verdient der Linolsäuregehalt getrockneten Biertrebers, der bei der Geflügelfütterung einen erheblichen Prozentsatz dieser essentiellen Fettsäure liefert.

Wie von der Universität Florida berichtet wird, kann getrockneter Biertreber in Rationen für gewerbliche Legehennen in Gehaltsmengen von 5-10% eingesetzt werden. Beimischungen von sowohl 5 wie auch 10% führen zu einer merklichen Steigerung der Legeleistung, wenn Biertreber in den genannten Grössenordnungen gegen andere Komponenten ausgetauscht wird.

Ausserdem kann Biertreber mit Erfolg in der Junghennenfütterung für den Legefarmnachbesatz eingesetzt werden. Die empfohlenen Mengen von 20-25% sind Tabelle 2 zu entnehmen.

Eine umfassende Versuchsserie ist an der Universität Nebraska durchgeführt worden, in deren Verlauf die Auswirkungen einer Beimischung von Biertreber bzw. Biertreber, 5% Hefe enthaltend, in der Fütterung von Mast- und Zuchtputen studiert wurden.

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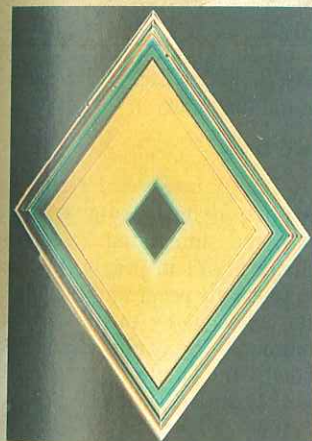
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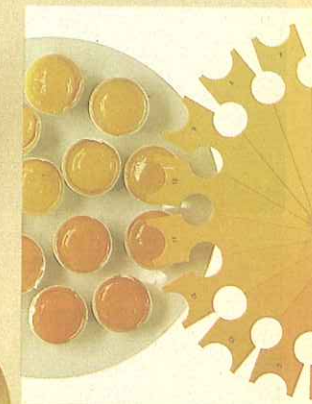
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